

# Cedar Grove Composting Stormwater Treatment Options

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# Facility Design Aspects

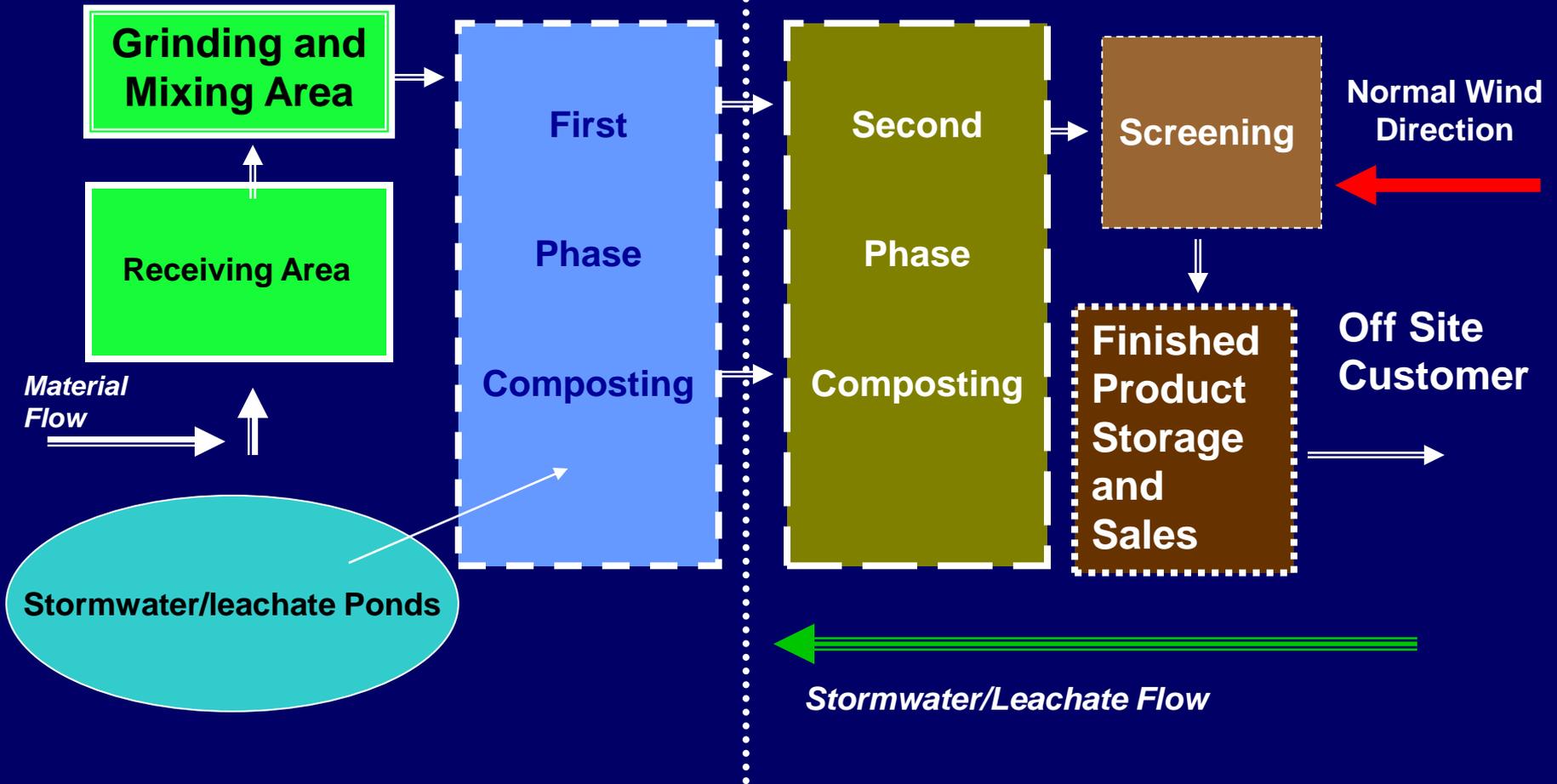
- **High Contact Area  
Drain to Separate  
Location**
- **High Traffic Drain to  
Oil/Water Separator**
- **Fresh Material Down  
Stream From Finished**

# Best Management Practice (BMP)

## Typical Site Plan

*Contaminated Side*

*Treated Side*





Receiving Building

























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## Facility with Stormwater and Leachate Combined (Source controlled)

	pH	Copper	Lead	Zinc	Ammonia	BOD	TDS	Phos	E.Coli	Oil
<b>Proposed Standard</b>	<b>5.5-9.0</b>	<b>.18</b>	<b>.05</b>	<b>1.2</b>	<b>3.0</b>	<b>30</b>	<b>1000</b>	<b>.7</b>	<b>126</b>	<b>15</b>
<b>Pond 1, Lined, Highly Aerated</b>	<b>7.5</b>	<b>.069</b>	<b>.05</b>	<b>.28</b>	<b>33</b>	<b>442</b>	<b>1210</b>	<b>ND</b>	<b>5000</b>	<b>ND</b>
<b>Pond 2, Lined Highly Aerated</b>	<b>7.5</b>	<b>.036</b>	<b>.028</b>	<b>.15</b>	<b>9</b>	<b>121</b>	<b>852</b>	<b>ND</b>	<b>3000</b>	<b>ND</b>
<b>Pond 3, Lined Slightly Aerated</b>	<b>8</b>	<b>.048</b>	<b>ND</b>	<b>.17</b>	<b>.12</b>	<b>13</b>	<b>592</b>	<b>ND</b>	<b>30</b>	<b>ND</b>

**Pre-elements**

**Oil Water Separator in High Traffic Area**

**Solid Separators**

# Facility with Stormwater Separated From Leachate (source controlled)

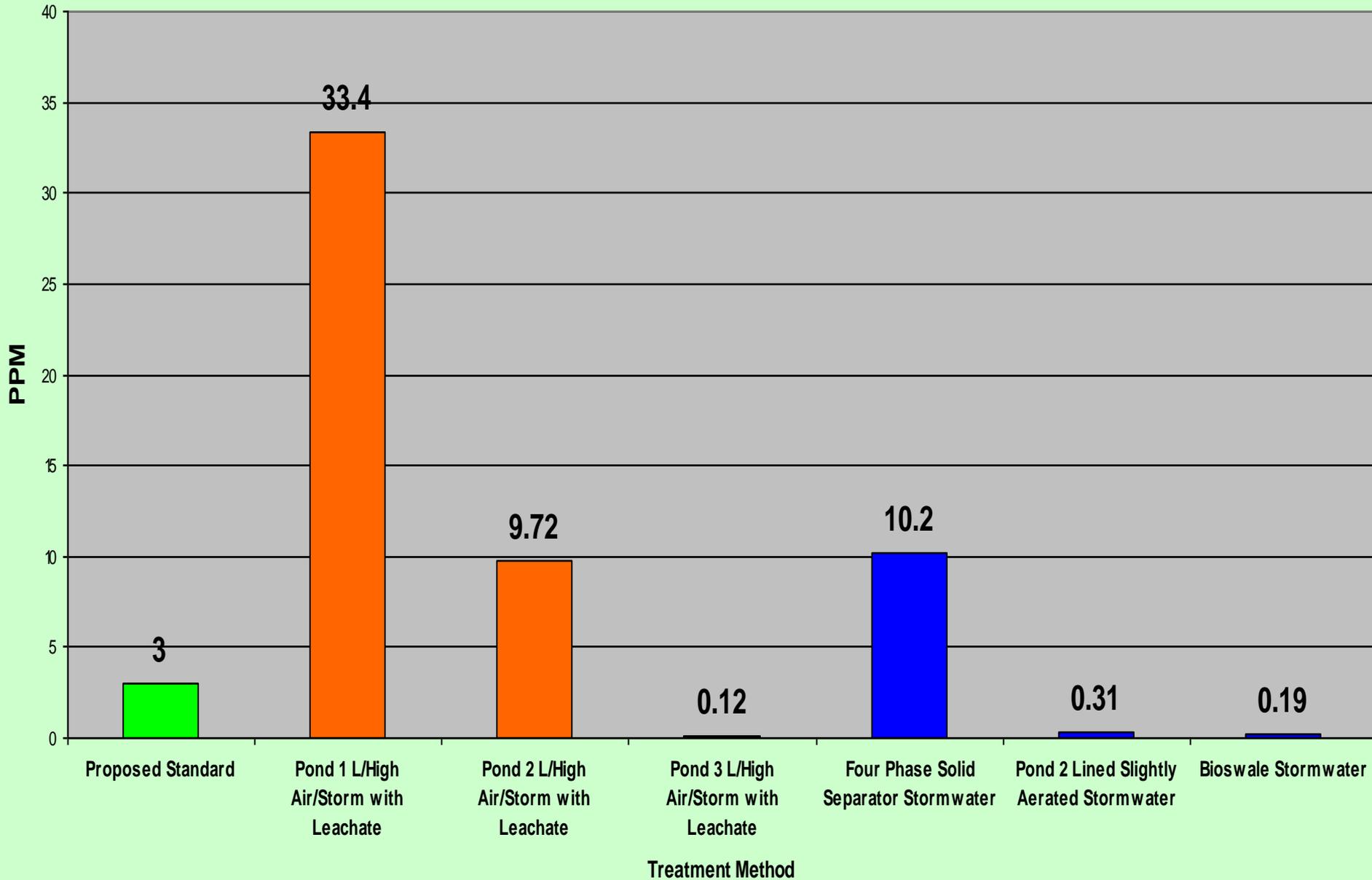
	pH	Copper	Lead	Zinc	Ammonia	BOD	TDS	Phos	E.Coli	Oil
<b>Proposed Standard</b>	<b>5.5-9.0</b>	<b>.18</b>	<b>.05</b>	<b>1.2</b>	<b>3.0</b>	<b>30</b>	<b>1000</b>	<b>.7</b>	<b>126</b>	<b>15</b>
<b>4 Phase Solid Separator</b>	<b>6.54</b>	<b>.06</b>	<b>.05</b>	<b>.3</b>	<b>10</b>	<b>97</b>	<b>462</b>	<b>ND</b>	<b>1600</b>	<b>ND</b>
<b>Pond 1, Lined Lightly Aerated</b>	<b>7.8</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>.3</b>	<b>14</b>	<b>NT</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>
<b>Bioswale</b>	<b>7.6</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>.19</b>	<b>13</b>	<b>NT</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>

**Pre-elements**

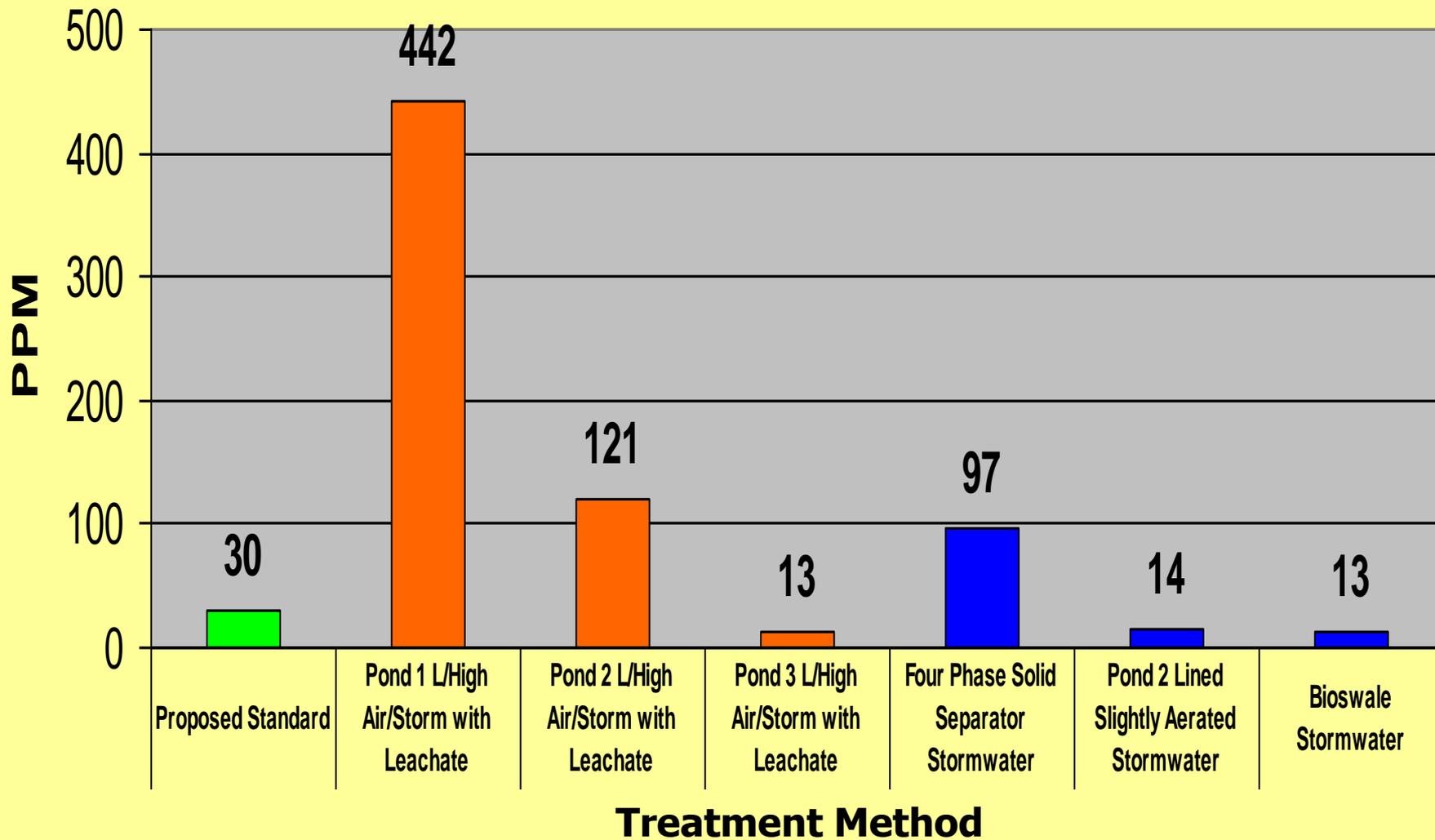
**Oil Water Separator in High Traffic Area**

**Solid Separators**

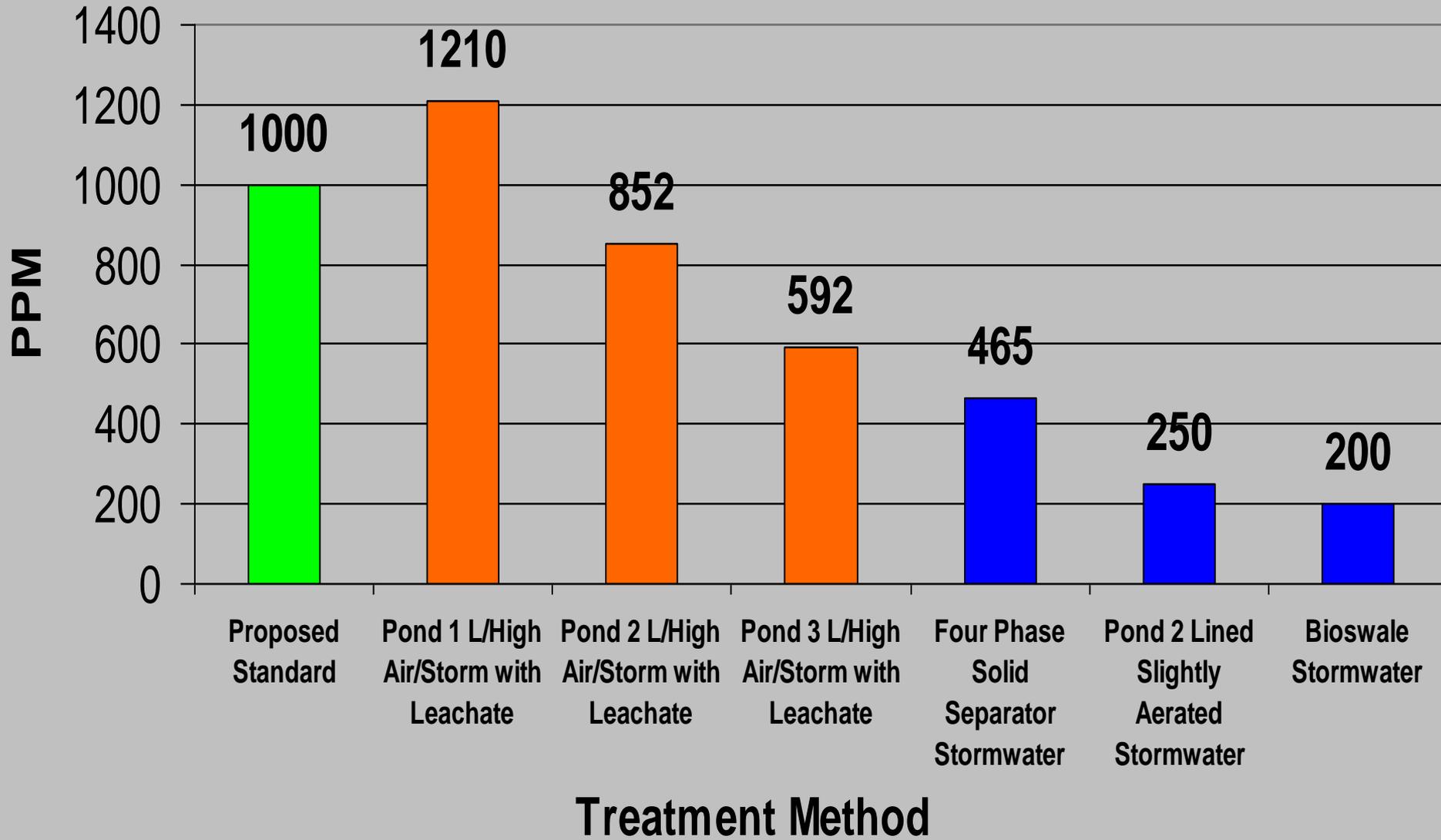
# Ammonia



# BOD



# TDS





# Functional Stormwater Treatment

## Lower Cost

- Compost Berms
- Solid Separators
- Bioswales

## Higher Cost

- Lined Ponds
- Pond Aeration
- Multiple Units or Treatment Trains

# Stormwater Operational Practices

- Sweeper Truck *\$75 per hour*  
*4hr twice/wk =*  
*\$600 per week*
- Keep Solid Separators  
and Catch Basins  
Clean *\$75 per hour*  
*2 hr = \$150 per week*

# Cost of Each Treatment Unit

- Oil/Water Separator \$ 41,000
- Solid Separator \$ 58,500
- 46,000 Leachate Tank w/Secondary Containment, Cover, Pump and Line \$150,000
- 2-500,000 gal Lined Ponds \$ 83,000 100 mil liner  
Double bottom, add \$40K for \$ - 7,000 80 mil liner  
excavation \$ 40,000
- 3-Surface Aerator (stainless steel) \$ 20,000 7 hp
- 500,000 gal wet pond \$ 25,000
- 600 ft Bioswale (add \$2k for veg) \$ 7,000
- Leachate pump to re-hydrate and plumb line from tank \$ 9,000

# Most Effective For the Least Cost

- Sweeper truck once per week
- Compost Berm 1" Screen Material  
*1 ft High by 3 ft Wide*
- 4 Phase Solid Separator
- 1 Wet Pond
- 1 Bioswale

# **Cedar Grove Composting Everett Washington Facility**

